Mental health of Dutch Peacekeeping Veterans 10-25 years after deployment

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Ellen R. Klaassens
Tineke van Veen
Jos M.P. Weerts
Frans G. Zitman
Abstract

Background
This report describes the mental health of Dutch peacekeeping veterans, 10-25 years after deployment, and its association with deployment-related traumatic events.

Method
We randomly selected a group of 1046 peacekeeping veterans, who participated in military missions in Lebanon, former Yugoslavia, and various other missions between 1979 and 1997. We sent a questionnaire assessing current levels of psychological distress (Brief Symptom Inventory – BSI), and a questionnaire assessing trauma related to deployment.

Results
Psychological data were available for 729 veterans. In 83% of the veterans, no significant psychological distress was found, whereas 17% scored above the BSI cut-off for psychopathology. Interestingly, this percentage was equal to that in a non-patient norm group.

Conclusion
From this finding we concluded that 10-25 years post-deployment, Dutch peacekeeping veterans do not show more psychological distress than the general Dutch population. In addition, we did not find a significant association between trauma exposure 10-25 years ago and current BSI scores. Moreover, trauma-exposure explained only 9% of the variance in psychological distress. Thus, although military peacekeeping operations may have a strong impact on the lives of soldiers, in this group of veterans they do not seem to have caused severe psychological distress 10-25 years after deployment.
Introduction

In recent years, the effects of experiencing traumatic or severely stressful events during international military missions on the mental health of military personnel have been investigated extensively. In this study, we use the term peacekeepers when in fact we mean peacekeepers as well as military personnel who were active as peace-enforcers. A peace-enforcement mission, as the name already suggests, is a mission that is entitled to use force to control aggression between countries (e.g. forcing Iraq under Chapter VII of the Charter of the United Nations (UN) to withdraw from Kuwait in 1990), as well as violence and humanitarian emergencies within countries (e.g. intervening in the civil war in former Yugoslavia in the second half of 1995). We will not discuss studies that have been performed among actual combat soldiers in this article.

Even though traditionally peacekeepers are not active in actual combat zones, reports of being shot at, ambushed or taken hostage, seeing others being killed or injured, and witnessing human suffering, are numerous. Several studies show that peacekeepers are at risk of developing post traumatic stress disorder (PTSD) as a result of these stressors. Among male Dutch peacekeeping veterans who were deployed in former Yugoslavia between 1993 and 1995, 3% reported PTSD 1-3 years after deployment, whereas 21% fulfilled at least one criterion for PTSD. A study among Dutch peacekeeping veterans deployed in Lebanon between 1979 and 1985 showed a reduced psychological wellbeing in 15% of the veterans, 25 years after deployment. The long-term relationship between deployment-related traumatic events and psychological wellbeing, however, was not investigated in this study. Peacekeepers are also at risk for other mental health problems. Among Australian veterans of the UN peacekeeping force in Somalia, at least one-fifth had problems with anger, irritability, intrusive thoughts and other psychological complaints, 15 months following their return. In a study among active-duty United States (US) military personnel who served as peacekeepers in Somalia, one-third of the veterans met criteria for psychiatric caseness. The most common symptoms were depression, hostility, paranoid ideation, and psychoticism. Furthermore, almost 29% of Canadian peacekeeping veterans had a depressive disorder one to nine years after deployment. Thus research on the mental health of peacekeepers should not be restricted to PTSD, but include a broad range of psychopathology. Several studies show that the severity of PTSD symptomatology in peacekeeping veterans is related to the number of deployment-related traumatic events. Studies on the relationship between deployment-related trauma exposure and mental health in a broader sense are scarce. Exposure to traditional war-zone related stressors (e.g. being fired upon, having to perform dangerous patrols)
was the strongest positive predictor of psychiatric symptomatology in US peacekeepers deployed in Somalia 12. In another study among US peacekeeping veterans from Somalia, depression and PTSD were associated with potentially traumatizing experiences during deployment, whereas hostility and alcohol use seemed to be more related to predisposing characteristics and pre-existing behavior patterns 13. It should be noted that almost all of these studies focus on the first few years after deployment. They do not provide information on the long-term development of mental health problems.

In this paper we aimed to study the long-term effects of exposure to deployment-related trauma in a cohort of Dutch peacekeeper veterans. We addressed the following questions: (1) what is the mental health of peacekeeping veterans, 10-25 years after deployment? and (2) is mental health, 10-25 years after deployment associated with exposure to deployment-related traumatic events?

Method

Sample
A random sample of 1046 Dutch peacekeeping veterans (950 men and 96 women) was selected from a group of nearly 8,000 veterans from high risk peacekeeping missions, all registered at the Dutch Veteransinstitute. This institute is founded by the Dutch Ministry of Defense and aims at providing care and support to all military veterans and their families, to promote social recognition for veterans, and to disseminate information and stimulate research. Currently, 17,000 of the approximately 45,000 veterans in the Netherlands are registered at the Veteransinstitute (source: Dutch Veteransinstitute). The selected veterans participated in 2 major high risk military actions between 1979 and 1995 and various smaller missions (e.g. Cambodia and Kosovo). The UNIFIL (United Nations Interim Force In Lebanon) veterans represent the group of peacekeepers who were deployed approximately 25 years ago (1979-1985). The UNPROFOR (United Nations Protection Force - former Yugoslavia) veterans represent the group of peacekeepers who were deployed approximately 10 years ago (1993-1995). The veterans from the various other missions were deployed between 1992 and 1999.

Procedure
Using Dillman’s Total Design method 14, a large survey was sent out to 1,046
veterans. The survey consisted of a questionnaire assessing traumatic events related to peacekeeping operations, a questionnaire assessing current levels of psychological distress, and a prepaid return envelope. Approximately one week after the first questionnaires were sent, a reminder was sent to all veterans, thanking the ones who had already returned their questionnaires and asking the others to do so. Three weeks after this reminder, a second set of questionnaires was sent to the veterans who had not returned their questionnaires, with an accompanying letter stressing the importance of returning the questionnaires in order to get a representative sample. The study was approved by the Medical Ethics Committee of the Leiden University Medical Center (LUMC). Informed consent was obtained from all respondents.

**Instruments**

Current levels of psychological distress were measured with the Brief Symptom Inventory (BSI), a self-report questionnaire designed to assess psychological distress in patients as well as individuals who are not currently identified as patients\(^1\). The BSI consists of 53-items which are rated on a 5 point-Likert type scale, ranging from ‘not at all’ (0) to ‘very much’ (4). Nine symptom dimensions can be generated: (1) somatic complaints (SOM); (2) cognitive problems (COG); (3) interpersonal sensitivity (INT); (4) depression (DEP); (5) anxiety (ANX); (6) hostility (HOS); (7) phobic fear (PHOB); (8) paranoid thinking (PAR), and (9) psychoticism (PSY). A mean score, ranging from 0-4, is calculated for every dimension, with higher scores meaning more complaints. The total mean BSI-score (TOT) generates an overall measure of psychopathological symptom severity. In this study, the Dutch translation of the BSI was used\(^1\). Internal consistency of the BSI subscales is satisfactory (\(\alpha=.71-.85\)) and for the total BSI very satisfactory (\(\alpha=.96\)). Construct validity is sufficient. Norm scores for a normal population were available. The norm group upon which the norm scores for the normal population were based was a group of 88 men and 111 women, randomly selected from the Dutch population and stratified on number of inhabitants of their place of residence as well as on gender. For this study we used the scores of the male population. The cut-off score of 0.70 on the TOT is used as a general measure of psychopathological caseness. For all nine subscales cut-off scores for psychological distress are available as well\(^1\).

Trauma related to peacekeeping operations was assessed with an 11-item self-report questionnaire that asked about the experience ("yes" or "no") of 10 possibly traumatizing events (being directly in the line of fire, being held at gunpoint, taken hostage, seeing dead or injured soldiers or civilians, hearing the desperate cries of injured people, having to aid in the removal or burial of
human remains, being severely injured, witnessing someone else being severely injured or being killed (either someone from one's own group or someone unknown), being in direct danger in some other way than already mentioned). One question was about experiencing any other stressful event that was not mentioned before. The questionnaire was based on a deployment related trauma questionnaire that was designed especially for a large study among Dutch UNIFIL veterans. For our study, we selected items that represented a broad range of potentially traumatic events. A trauma exposure score was computed by summing all events that were answered with “yes”.

**Statistical analyses**
Independent samples $t$-tests were performed to compare the total group of veterans and the norm group on the BSI outcome measures and to compare veterans of the different missions on exposure to trauma. One-way ANOVA with Bonferroni correction was used to distinguish group differences on the BSI subscales and on age of first exposure to deployment-related trauma between veterans from Lebanon, former Yugoslavia and the various other missions. Linear regression analysis, with TOT as the dependent variable and the trauma exposure score as the predictor, was used to study the effect of trauma on the TOT. For all analyses, SPSS 14 was used. $P$-values were considered significant when <.05.

**Results**

**Demographics**
Of the 1046 questionnaires, 747 (71%) were returned. A group of 18 respondents did not give any information on the BSI, and therefore, they were excluded from the analyses. Thus, in this study, a group of 729 respondents was investigated. Respondents were younger than the all male norm group (n=88). The mean age of the study group was 43.8 years (SD=10.3, range 25-78), the norm group was 3.2 years older (SD=14.0, range 19-82; 95% confidence interval (CI) 0.1 – 6.2). Ninety-nine percent of the respondents were male. Most respondents were deployed in Lebanon (46%) and former Yugoslavia (37%), and 17% served in other missions. The majority of veterans participated in a single mission. There was a significant age difference between the three groups of veterans at the time of the interview. At the time of the investigation the mean age of the veterans who
were deployed to Lebanon (UNIFIL) was 47.4 years (SD=7.7), the veterans from the various other missions were 4.0 years younger (SD=11.8; 95% CI 2.1 – 6.0) and the veterans who were deployed to former Yugoslavia (UNPROFOR) were 3.8 years younger again (SD=10.6; 95% CI 1.8 – 5.8). There also was a significant age difference at time of deployment. At the start of the deployment the mean age of the UNIFIL veterans was 23.1 years (SD=6.8), the UNPROFOR veterans were 27.7 years (SD=10.0; 95% CI 3.1 – 6.1) and the other veterans 31.3 years (SD=10.9; 95% CI 1.6 – 5.7). This implies that the time elapsed since deployment was the longest for the UNIFIL group (M=23.9 yrs, SD=3.6), and the shortest for the UNPROFOR and other veterans, respectively 12.3 years (SD=3.2; 95% CI 11.7 – 13.1 and 12.0 years shorter (SD=5.7; 95% CI 11.2 – 12.9). No differences between female and male veterans were found in age, psychological distress, or deployment-related variables.

**Figure 1.** Mean scores on the BSI-dimensions for veterans and the norm group. BSI-sumscores range from 0-4. Cut-off scores for different subscales: SOM 0.52, COG 0.96, INT 0.90, DEP 0.79, ANX 0.71, HOS 0.55, PHOB 0.49, PAR 0.71, PSY 0.59 and BSI-TOT 0.70.
Psychological distress
The whole group of veterans did not differ from the norm group in scores on the TOT. This was also true for the UNIFIL group, the UNPROFOR group and the veterans deployed elsewhere analyzed separately. We compared the BSI subscales (Figure 1), and the only statistically significant difference between the whole group of peacekeepers and the norm group was found in hostility (HOS). In the norm group the mean score on hostility was 0.38 and in the veterans group 0.41 (95% confidence interval (CI) 0.05 – 0.24). When the BSI subscale scores of the three groups of veterans were compared separately, only the UNIFIL veterans differed from the norm group. They scored significantly higher on the hostility subscale (mean difference 0.22, 95% CI 0.09 – 0.43). Only 127 veterans (17%) did score above the BSI cut-off for psychopathological caseness, with the UNIFIL group having the highest percentage (n=71, 21% of the UNIFIL veterans).

Exposure to trauma
A total of 636 (87%) veterans reported having experienced one or more traumatic events, whereas only 93 (13%) reported no traumatic events during deployment. The most frequently reported traumatic events during deployment were being in direct danger as a result of deployment-related actions, accidents or threats (72%), the sight of dead or injured people (66%), being directly in the line of fire (48%), and being held at gunpoint (46%). There was no difference in the nature or extent of trauma exposure between the veterans who served in Lebanon, former Yugoslavia, and the various other missions. We observed a statistically significant difference in trauma exposure between veterans who scored above the TOT cut-off for psychopathology (mean score=5) and those who scored below this cut-off (mean score=3.5; 95% CI 1.1 – 2.0). We used linear regression analysis to study the effects of exposure to deployment-related trauma on psychological distress. We observed that trauma exposure increased the risk of psychological distress after 10-25 years and explained 9% of the variance ($\beta=0.63$, 95% CI .048 - .079). Introducing time elapsed since trauma in our analysis did not alter the results. Non-parametric statistics (Kruskal-Wallis) confirmed this significant association (data not shown).

Discussion
In this study, we report about the long-term mental health in Dutch peacekeepers
10–25 years after deployment and its association with deployment-related traumatic events. Veterans from our sample did not report more psychological distress than the non-patient norm group except for the symptom dimension of hostility, as veterans showed more hostility. However, the mean scores of this dimension were within the normal range. We concluded that Dutch peacekeeping veterans showed no more psychological distress 10-25 years after deployment than a norm group. This may be due to several reasons. First, the effects of trauma may have faded over the years. Second, compared to non-military individuals, peacekeepers may be better equipped, physically and psychologically, to handle traumatic events. Third, it cannot be excluded that the 28% non-responders were mentally less healthy. Only the UNIFIL veterans scored above the cut-off for psychopathology on the dimension of hostility. However, high scores on the BSI are merely indicative for psychopathology and functional impairment, and a clinical interview is needed for a definite evaluation. Finally, assessing deployment-related psychological distress with an instrument that is more specifically aimed at PTSD, and therefore more sensitive, might have yielded different results. In addition, we investigated the relationship between deployment-related traumatic events and mental health after a long period of time. Peacekeeping veterans with current psychological distress reported more deployment-related traumatic events than veterans without psychological distress. This may be an indicator of a long-term effect of trauma-exposure on mental health. However, the effect explained only a small part of the scores for psychopathology. Other factors that contribute to the development of PTSD after deployment have been reported, e.g., age at the time of deployment \(^6\). Interestingly, UNIFIL peacekeepers were younger at the time of first exposure to deployment-related trauma, and reported more hostility than the other peacekeepers. When we looked at the veterans with psychological distress in the clinical range (TOT>0.70), we found that they were younger at the time of deployment than the veterans who reported less psychological distress.

In line with other studies, we did not find a strong relationship between deployment-related stressors and mental health. This indicates that other factors most likely play a role in the development of psychopathology after peacekeeping. In conclusion, the mental health of peacekeepers in our study was comparable to that of the male population in the Netherlands. For most peacekeepers, deployment 10 to 25 years ago, was not associated with poor psychological functioning. Likewise, military personnel deployed to Bosnia (1992-1996) had a very similar health status to the control group of non-deployed military personnel \(^17\). We do not want to dismiss the impact of deployment on the peacekeepers involved, especially because recent and present military operations have changed towards war or war-like operations,
but the findings of our study may provide hope for military personnel involved in current peacekeeping and other military operations.

A few methodological limitations of this study have to be mentioned here. First, our sample of veterans is a random sample of veterans who chose to register at the Dutch Veteransinstitute. To date, it is not known if these veterans differ from the 28,000 non-registered veterans. Therefore, we have to interpret these results with some reserve. A second limitation of this study is that we investigated retrospective accounts of traumatic events that occurred 10-25 years ago with a self-report trauma questionnaire that was based on a trauma questionnaire used in a large study among UNIFIL peacekeepers that was not validated. In a longitudinal study, subjects were found to be not very accurate in estimating the frequency of past events but accurate in reporting whether or not a certain event had taken place. Therefore, to minimize the effect of over or underreporting traumatic events we calculated the total number of items answered with ‘yes’. In a subsample of peacekeepers we assessed deployment related trauma with this trauma questionnaire once for initial screening purposes and once during the psychological assessment (approximately 6 months later). Correlations between the occurrence of certain events were high (data not shown). A third limitation is that our findings are based on a self-report instrument of mental health rather than assessment with a clinical diagnostic instrument. However, the BSI is a widely used and well-validated instrument. A fourth limitation of this study is that we did not assess other possible predictors for mental health problems after deployment. The purpose of this study, however, was not to give a complete view of factors contributing to the development of mental health problems in peacekeeping veterans. Our goal was to study the long-term relation between deployment-related trauma and mental health 10-25 years after deployment. We have shown that only a small percentage of mental health problems in peacekeeping veterans was related to the traumatic events that happened during deployment 10-25 years ago.

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Mental health of peacekeeping veterans

References


